

8. 'Introduction to Entomology.'
9. 'De antennis insectorum dissertatio posterior, usum antennarum recensens.' 12mo. Hamburgi, 1800.
10. "On the Life-history and Development of a Gnat (*Culex*)." Trans. Manchester Microscop. Soc. 1900.
11. Loc. cit.
12. "Physiologische und histologische Untersuchungen über das Geruchsorgan der Insecten." Zeitsch. f. w. Zool., Bd. xxxiv. 1880.
13. "Beitrag zur Kenntniss der Sinnesempfindungen der Insecten." Mitt. d. Münchener entom. Vereins, Bd. ii. 1878.
14. Ann. Soc. Entom. Belg. xxx. 1886, p. cxx.
15. Loc. cit. p. 592.
16. 'Ants, Bees, and Wasps,' p. 96.
17. 'Hist. Nat. des Fourmis,' p. 41.
18. Arch. de Zool. 2<sup>e</sup> séries, tom. v. 1887.
19. Journal of the Acad. of Nat. Sciences, Philadelphia, vol. iv. pp. 158-160.

5. Notes on a small Collection of Heterocera from the Fiji Islands, with Descriptions of some New Species. By G. T. BETHUNE-BAKER, F.L.S., F.Z.S.

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(Plates VIII. & IX.\*)

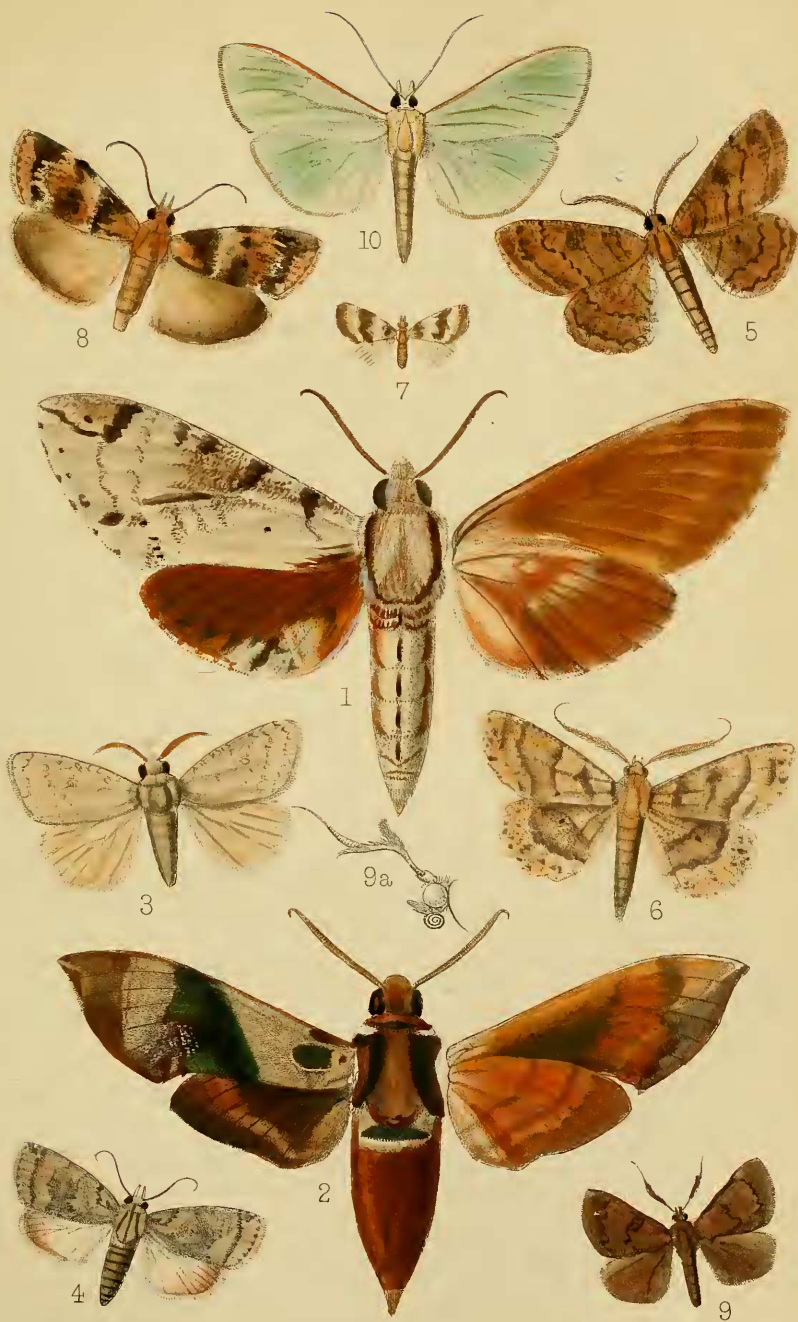
In the early part of last year I received, through the kindness of my friend Mr. Waterhouse of Sydney, a small collection of Heterocera from the island of Viti Levu (the largest of the Fiji group), among which are several interesting new species and some new records. The measurements of the specimens are taken by measuring the length of the wing from the centre of the thorax to the apex of the primary and doubling it. All the insects were taken at Nausori on the Rewa River.

#### SPHINGIDÆ.

PSILOGRAMMA JORDANA, sp. nov. (Plate VIII. fig. 1.)

♂. Head and thorax pale grey; patagia edged laterally with black, below which is a whitish stripe, the black stripe is continued through the metathorax and meets in the centre. Abdomen grey with a dark central dorsal stripe, a broad lateral rust-red patch on each side which merges into the dark lateral wedge-shaped spots of the posterior segments. Palpi grey, with a broad lateral dark rust-coloured stripe below the tip. Primaries whitish, basal

\* For explanation of the Plates, see p. 95.



E.C.Knight del.et lith.

West, Newman imp.

HETEROCERA FROM THE FIJI ISLANDS.







area suffused with grey, with a dark spot on the costa at the base and another at a fifth, a small rust-red patch at the base of the inner margin; a medial large grey patch to vein 2 and bounded on the costa by two short blackish stripes, the one nearer the base touching a whitish spot near the end of the cell and encircling it, a double postmedial strongly serrated line terminates this medial patch; a subterminal deeply arched interrupted blackish dentate line rising in a heavy black costal dash, beyond which is a wedge-shaped dark grey patch with a white outer margin; from the apex a dentate black oblique stripe meets the costal dash; between veins 3 and 5 are three dark marginal patches, the uppermost one obsolescent; cilia white, broadly intersected with rust-colour; between veins 3 and 4 a black, slightly curved stripe from the cell to the subterminal line; there is a slight grey scaling beyond the basal grey area; secondaries rich deep rust-colour, with a broad obscure black termen interrupted by the ground-colour at the veins, three pale lavender-greyish patches in the tornal area. Under surface: both wings rusty reddish, primaries with a broadish postmedial line, secondaries with a broad medial and postmedial line.

Expanse 106-110 mm.

The type from Nausori is in my collection.

#### CHROMIS EROTUS (Cram.).

My specimens are somewhat different from ordinary specimens from Australia and New Guinea &c., the brown oblique nebulous stripes in the primaries are absent, giving them an unusual appearance; there is, however, a trace of the stripe in one specimen.

#### HEPIALIDÆ.

##### PHASSODES, gen. nov.

Palpi porrect, end segment depressed slightly; antennæ short, filiform; all the legs fringed with hair on each side, hind legs with the tarsus perfect; tibiæ and femora short. Neuration as in the genus *Phassus* Wlk., but with two bars close together from near the base of vein 12 to the costa in the primaries; vein 1*a* free, 1*c* of moderate length, a bar from 1*b* to 1*c* and to the median vein; veins 9 and 10 in both wings forming a long fork on a long stalk. Primaries more or less excavated in both sexes below the apex, and decidedly longer than the secondaries; near the base of the inner margin of the primaries in the ♂ is a large gland (evidently a scent-gland), with a semicircular opening towards the cell.

Type, *Phassodes odorevalvula* B.-B.

In section B the neuration and other characters are precisely the same except that the scent-valve is absent. I am strongly of opinion, however, that a genus should not be created on a purely sexual character.

All the species are strongly scented.



## Section A.

PHASSODES ODOREVALVULA, sp. nov. (Plate IX. figs. 1, 2.)

♂. Head and thorax brownish grey, abdomen paler. Primaries pale grey, almost entirely suffused with darker grey and closely covered with spots not quite so dark; a large scent-valve occupies the basal area of the inner margin, with a crescentic opening towards the costa, two parallel marks on the valve, a series of antemedial spots, a medial series from the costa to vein 4; a silver spot at the upper angle of the cell proper and also in the angle of vein 6, beyond which is the postmedial series of spots from the costa to just in front of the tornus, followed closely by a very irregular series to vein 3, the subterminal row somewhat confluent with the terminal row; a pale spot on the costa above the silver spot, and two pale patches in front of apex. Secondaries uniform pale ochreous, tornus darkish grey.

Expanse 70–102 mm.

The type is in my collection from Nausori. I have also a much smaller specimen from the same locality, in which the spots are somewhat obsolescent and obliterated, the patches on the costa are paler and contrast strongly with the darker areas, whilst there is a broad pale patch on the inner margin in front of the tornus. There is no doubt, however, that they are both the same species.

## Section B.

PHASSODES GUTHREI, sp. nov. (Plate IX. fig. 3.)

♂. Head, thorax, and legs pale reddish, abdomen darker. Primaries greyish, covered nearly all over with ochreous-reddish spots; base entirely so covered for a fifth; a narrow irregular silvery white streak across the cell to vein 2, followed by the confluent spots across the cell, with a silvery wedge-shaped patch below, touching which is a long subovate spot to beyond the middle of the inner margin; a silvery patch in the upper part of the cell, enclosing two small confluent spots (the lower of which is shifted outwards) except as to their lower margin, following which are three large confluent spots, the lower of which touches the subovate spot; a silvery patch margins the upper spot and is followed by two pairs of confluent spots, divided by another silvery patch, below which is a long spot in the angle of veins 5 and 6, with an irregular series of four roundish spots below it to the tornus; above the two pairs of spots is a small one margined laterally with silvery, with a larger spot beyond and two smaller below it; a postmedial series of eight irregular spots from vein 8, above which to the costa is a short twin series of three spots, the lowest spot being the largest; a subterminal series of spots, those near the tornus being darkly pupilled; termen spotted with fair-sized spots separated by silvery patches; a large silvery twin patch margins internally the subterminal spots between veins 5 and 7. Secondaries uniform creamy ochreous.

♀. Entirely brownish grey with paler spots darkly-pupilled.

Expanse, ♂ 100-105, ♀ about 120 mm.

The types are in my collection and were taken near the Rewa River in Viti Levu.

*PHASSODES BIMORPHA*, sp. nov.

♂. Head, thorax, and abdomen brown. Primaries darkish brown, with the spots obsolescent; a darkly-pupilled obscure spot outside the cell in the angle of veins 3 and 4, and two spots equally obscure near the termen between veins 4, 5, and 6; two slightly paler patches on the costa towards the apex. Secondaries pale ochreous.

Expanse 114 mm.

The type from the Rewa River, Viti Levu, is in my collection.

I have a second smaller specimen which may be of the same species, from the same locality, but it is very much paler, and the spots are more distinct, but the three darkly-pupilled spots are present as in the type.

More material may prove this species to be a dark form of the preceding one, but it is so different in colour and general appearance that we must treat it as distinct until proved to the contrary.

*PHASSODES NAUSORI*, sp. nov. (Plate IX. fig. 4.)

♂. Head and thorax pale brownish grey, abdomen pale ochreous grey. Primaries pale grey, almost entirely covered with spots and patches of the same colour, finely and darkly margined, and separated by metallic silver markings, which are more pronounced and larger in the posterior third of the wing. In the upper part of the cell are three of these silver dividing lines which are fine; at the upper angle of the cell there is a silver spot, followed by a double mark like the letter **H** without the central bar; above and below this is another; there is a very interrupted and broken posterior line of these silver marks, and a double, less irregular subterminal line, and also a terminal row. Secondaries ochreous grey.

Expanse 119-125 mm.

The type from Nausori on the Rewa River (Viti Levu) is in my collection; and I have a second specimen which I believe to be this species, also a male, but which has no trace whatever of the silvery markings.

*PHASSODES REWAENSIS*, sp. nov. (Plate IX. fig. 5.)

♂. Head, thorax, and abdomen dusty grey. Primaries pale grey, with the basal area covered with crowded spots barely paler than the ground-colour; an irregular medial series of three large spots; a double postmedial series of spots, the outer series slightly smaller than the inner, in the latter the spot between veins 3 and 4 is darkly pupilled; a short row of three or four spots from the costa to vein 6; a double subterminal row, the inner of which extends only to vein 4, and the spots are small and isolated. Termen